

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

**In the Matter of**

<b>Amendment of Parts 2, 25, and 87 of the</b>	)	
<b>Commission's Rules to Implement Decisions</b>	)	
<b>from World Radiocommunication Conferences</b>	)	<b>ET Docket No. 02-305</b>
<b>Concerning Frequency Bands Between 28 MHz</b>	)	
<b>and 36 GHz and to Otherwise Update the Rules</b>	)	
<b>in this Frequency Range</b>	)	
	)	
<b>Amendment of Parts 2 and 25 of the</b>	)	
<b>Commission's Rules to Allocate Spectrum For</b>	)	<b>RM-10331</b>
<b>Government and Non-Government Use in the</b>	)	
<b>Radionavigation-Satellite Service</b>	)	

**To: The Commission**

**COMMENTS OF ARRL, THE NATIONAL ASSOCIATION  
FOR AMATEUR RADIO**

ARRL, the National Association for Amateur Radio, also known as The American Radio Relay League, Incorporated (ARRL), by counsel, hereby respectfully submits its comments in response to the *Notice of Proposed Rule Making*, FCC 02-261, 67 Fed. Reg. 75968, released October 7, 2002 (the "Notice").<sup>1</sup> In response to certain of the proposals contained in the Notice, ARRL states as follows.

1. In this proceeding, the Commission proposes to amend Parts 2, 25, and 87 of our Rules in order to implement domestically various allocation decisions from several World Radiocommunication Conferences ("WRCs") concerning the frequency bands between 28 MHz and 36 GHz and to otherwise update the Commission's Rules in this frequency range. There are but two aspects of this proceeding that bear directly on the Amateur

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<sup>1</sup> The Notice was published in the Federal Register December 10, 2002. Therefore, these comments are timely filed.

Radio Service, and ARRL offers no comment on proposals in the Notice other than with respect to those two.<sup>2</sup> First, the Commission proposes to more than double the size of the geographic area in New Mexico and Texas where amateur stations in the band 420-450 MHz would be limited in power and where spread spectrum radiolocation systems in the sub-band 420-435 MHz should not expect to be accommodated. Second, it proposes to reflect NTIA's recent action, which specified that Federal Government wind profiler radar systems ("wind profilers") will operate in the subband 448-450 MHz.

2. Before dealing with the substance of these two proposals, it should be noted that both have some effect on Amateur operation in the 420-450 MHz band, and as such, should be cross-referenced in Part 97 of the Commission's rules dealing with the Amateur Service, perhaps, with respect to the wind profiler radar proposal, at Section 97.303(f), which deals with frequency sharing requirements in the Amateur allocation at 420-450 MHz. Section 97.313(f), dealing with power limitations relative to Footnote US7, may require amendment as well. Otherwise, it may be assumed that Amateur Radio operators will not be cognizant of the changes, if any are implemented in this proceeding, and those operators will thus not be aware of changes in their substantive obligations thereunder. It is ARRL's understanding that there are pending in the Wireless Telecommunications Bureau numerous rulemaking petitions proposing miscellaneous

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<sup>2</sup> It is noted that at paragraph 69 of the Notice, the Commission proposes to allocate, among others, the band 1215-1300 MHz to the Earth Exploration Satellite Service [EESS (active)] and Space Research Service [SRS (active)]; In the Federal Government Table, the Commission proposes that these active spaceborne sensor allocations would have primary status at 1215-1300 MHz, but that, in the non-Federal Government Table, the allocation is proposed to have secondary status. Since the Amateur Service is also secondary in the non-government table, this is not deemed to have a substantial adverse effect on Amateur Radio Service use of the 1240-1300 MHz band. It is also noted that this allocation would be subject to Footnotes suggested by NTIA that would provide that active spaceborne sensors must not cause harmful interference to, or constrain the use and development of, incumbent primary services in the bands 1215-1300 MHz. While the Amateur Service, which makes active use of the 1240-1300 MHz band, is not a

Part 97 changes which will soon be combined into a Notice of Proposed Rule Making.

The Commission could in that proceeding, on its own motion, make any necessary conforming changes to Section 97.303(f) of the Amateur Service Rules that may be necessitated by the outcome of this proceeding. Alternatively, it is recommended that conforming Part 97 amendments be made in this proceeding in a further order.

3. With respect to the first of the Commission's proposals regarding 420-450 MHz, to restrict Amateur power output in certain additional areas of Texas and New Mexico, it is clear that the band 420-450 MHz is allocated to the radiolocation service on a primary basis for Federal Government use and that footnote G2 generally limits such operations to military applications.<sup>3</sup> The band 420-450 MHz is also allocated to the Amateur Service on a secondary basis. Footnote US7 states that transmitters in the Amateur Service operating within 420-450 MHz in certain geographic areas are limited to 50 watts peak envelope power ("PEP") unless the Commission can reach an agreement with the applicable military frequency coordinator.<sup>4</sup>

4. On August 8, 2002, NTIA, on behalf of the Army, requested, among other things, that footnote US7 be modified such that the geographical area in footnote US7 is increased for New Mexico and Texas to include all of New Mexico, and Texas west of longitude 104° 00' West. The Army stated the following in support of its request:

The new proposed protection criteria [are] necessary to cover the entire test range operational area. The old restriction boundaries only include the northern half of El Paso, which is located very close to the south end of WSMR (White Sands Missile Range) and to McGregor Range at Fort

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primary user, it would benefit in terms of interference avoidance from these footnotes, and is satisfied that the proposals relative to this band are benign to the Amateur Service.

<sup>3</sup> See 47 C.F.R. § 2.106, footnote G2.

<sup>4</sup> See 47 C.F.R. § 2.106, footnote US7

Bliss. Amateur operations in the metropolitan area of Albuquerque and Santa Fe present a threat to missiles launched at Fort Wingate, NM aimed at the airspace over WSMR. Kirtland Air Force Base, with AF Research Lab (Directed RF Energy Programs), DoD NAG (National Assessment Group), and AFOTEC (Air Force Operational Test and Evaluation Command), is now a DOD test and evaluation center using areas both South (Manzano Mountain range) and West (Fort Sumner) of Albuquerque. Some testing in this area is vulnerable to higher power Amateur operations.

The effect of the Army/NTIA request would be to more than double the combined size of those areas of Texas and New Mexico where the maximum transmitter power that amateur stations may use is generally limited to 50 watts PEP rather than the general limit of 1.5 kW PEP<sup>5</sup>. The Commission proposes to make the changes requested by NTIA, and requests comment on the proposals.

5. It is difficult for ARRL to address the contention of the Army that Amateur power in excess of 50 watts PEP in the additional protected areas requested by the Army would cause interference to military radiolocation facilities involved in missile tracking, because the claim made by the Army is not substantiated by any technical information. It is most certainly a priority of Amateur Radio operators to avoid interference to primary government radiolocation facilities. It is not intuitively obvious, however, that such a large restricted area, which is in most respects far beyond line of sight paths to any military facilities, and which does not take into account terrain shielding factors (which would permit more flexibility on the part of Amateurs in the additional restricted area without risking interference to any government radiolocation operations), is as circumscribed as it could be. There is not enough information provided by the Army to meaningfully evaluate the need for this restriction, so ARRL would ask the Commission

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<sup>5</sup> See 47 C.F.R. § 97.313.

and NTIA to cooperatively evaluate this restriction to determine whether it is, in fact, overbroad.

6. That having been said, the 50-watt PEP power limitation at 420-450 MHz is not a substantial burden on a large number of radio amateurs who routinely use FM repeaters<sup>6</sup> and digital communications techniques at 440-450 MHz. It would, rather, restrict principally those who experiment with weak-signal terrestrial communications and some satellite experimenters, and it could preclude Earth-moon-Earth (EME) communications in the 420-440 MHz segment.<sup>7</sup> These activities are increasingly popular, and it is anticipated that there would, as the result of the change, be a large number of radio Amateurs who would request the “express authorization” of the Commission after mutual agreement, on a case-by-case basis, between the Commission District Director<sup>8</sup> “at the applicable district office and the military area frequency coordinator at the applicable military base.” ARRL therefore requests that, should the proposed restriction be implemented as proposed, the Commission establish an expedited method of processing such requests. The Commission’s Wireless Telecommunications Bureau presently has no expedited method of administering waiver or other special requests from Amateur Radio operators. The process is slow and cumbersome. It is urged that the Commission’s District Directors be placed in a position to receive, coordinate and grant a

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<sup>6</sup> It does, however, have a substantial burden on the licensees of the repeaters themselves, many of which use transmitters at higher power than 50 watts PEP output. The ARRL Repeater Directory shows that there are approximately 60 repeaters at 440-450 MHz in New Mexico, and another 7 in the affected area of West Texas. While not all these utilize output power above 50 watts, a substantial number inevitably do, and would be required to be shut down or have their coverage areas substantially reduced, absent some case-by-case relief.

<sup>7</sup> Signals from these facilities are highly directional, and protection of military facilities could be assured by proper coordination in most cases.

<sup>8</sup> The proposed language for the revised footnote US7 in the Notice makes reference to the no longer applicable “Engineers in Charge” rather than District Directors. The reference is correct in the current Section 97.313(f).

substantial number of case-by-case requests for relief from this restriction with the military area frequency coordinator on a reasonably rapid basis, without further administrative procedures. ARRL is willing to act as a repository for such granted waivers, and to make available an online database a listing of such, including any conditions which may be applicable in a given case. It is only in this manner that the Commission can fairly implement the requested restriction without it at least appearing to be an arbitrary limitation.

7. Turning to the Commission's proposal to locate Wind Profiler Radars (WPR) at 448-450 MHz, this issue was the subject of an extensive notice and comment rulemaking proceeding in ET Docket No. 93-59. The Commission had there proposed to permit government WPRs in the band 448-450 MHz, and non-government WPRs in the 902-928 MHz band. The Commission recently terminated that proceeding without action, because it was stale. However, on August 13, 2002, NTIA notified the Commission that it had recently specified that Federal Government wind profilers would operate in the sub-band 448-450 MHz.<sup>9</sup> Because the Commission is of the view that government WPRs are permitted under the existing radiolocation allocation at 420-450 MHz, it is placing the NTIA informational footnote in the Federal Government Table of Section 2.106 of the Commission's Rules. The Commission, however, requests comment on whether non-Federal Government wind profilers should also be allowed in this spectrum and if so,

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<sup>9</sup> NTIA has added the following Federal Government footnote to its *Manual*:

G129 Government wind profilers are authorized to operate on a primary basis in the radiolocation service in the frequency band 448-450 MHz with an authorized bandwidth of no more than 2 MHz centered on 449 MHz, subject to the following conditions: 1) wind profiler locations must be pre-coordinated with the military services to protect fixed military radars; and 2) wind profiler operations shall not cause harmful interference to, nor claim protection from, military mobile radiolocation stations that are engaged in critical national defense operations.

whether such an allocation should be on a primary or secondary basis. The Notice also requests comment on the impact of wind profiler operations on non-Federal Government operations permitted in this frequency range.

8. There is a substantial potential impact of WPRs at 448-450 MHz to Amateur Radio stations. As was explained in Docket 93-59, the 449 MHz center frequency to be used by WPRs is extremely heavily used by the Amateur Service on a secondary basis to government radiolocation for FM repeater operation. There are well over five thousand fixed repeater stations with input or output frequencies in the 447.0-449.975 MHz band in the United States. The 440-450 MHz band is the second most popular VHF or UHF amateur band for FM voice repeaters, and is extremely heavily loaded. These repeaters are used and useful daily for emergency, disaster relief, and public service communications on a regular basis, and are operated and maintained by individual Amateurs and Amateur Radio clubs. The repeaters are located at high elevations, and for that reason are likely to be susceptible to interference from WPRs nearby.

9. In its comments in the 1993 proceeding in Docket 93-59, ARRL noted that WPRs are radiolocation type devices, and therefore are within the jurisdiction of NTIA to authorize in that band. However, ARRL argued that NTIA could have made a better frequency choice for government WPRs. For example, the 445-447 MHz band would have been a better choice, since there are no repeater inputs or outputs in that segment. It is in the “gap” between those segments.<sup>10</sup> In addition, ARRL argued that the placement of WPRs geographically, if done on a coordinated basis, would minimize the preclusive

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<sup>10</sup> There are numerous control and other fixed links in that segment, which in many cases are harder to coordinate, because they are not all listed in a publicly available database. However, the S/N ratios of these

effect of government WPRs on existing Amateur repeaters at 440-450 MHz. Locating WPRs away from metropolitan areas and away from established communications sites where Amateur Repeaters are located will minimize interference. ARRL has, since then, conceded that the use of 448-450 MHz is apparently unavoidable for government WPRs. It was understood, however, in ARRL's contacts with NTIA and NOAA concerning government WPRs, that the National Weather Service, which operates them, would notify ARRL of the locations of WPR sites at such time as they are selected. Ideally, since the Amateur repeaters are incumbent in the band now, the National Weather Service should select sites that minimize the effect on those repeaters. At the least, however, ARRL would expect notification of planned WPR sites once the same are chosen.

10. In any case, there is no justification for allowing non-government WPRs to operate at 448-450 MHz. There is no indication of current support for such, and there was none in Docket 93-59.<sup>11</sup> Compatibility between WPRs and Amateur operations at 440-450 MHz is possible only if WPR sites are located in non-metropolitan areas and only if there is prior consultation on site selection. ARRL's preference is that such would be mandated in any final rules in this proceeding. Though ARRL is fully cognizant of the secondary status of Amateur Radio in the 420-450 MHz band, the Commission has an obligation to attempt to protect incumbent licensees against interference where relatively simple coordination procedures would make more efficient use of the allocation, and

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point to point links are relatively high, and interference from WPRs is less of an issue than it would be with respect to repeater inputs.

<sup>11</sup> The Commission proposed in that proceeding to permit non-government WPRs at 902-928 MHz, but there was little support for such use in that band either.



would permit both Government and Amateur uses to operate without interference.<sup>12</sup>

Indeed, this has been standard procedure for NTIA for years. NTIA explained the basis for successful sharing between Government and Amateur operations in its February, 1995 *Spectrum Reallocation Final Report, NTIA Special Publication 95-32*, at Appendix B, page B-2:

The Amateur Radio Service has successfully co-existed with Federal fixed, mobile and radiolocation services (i.e. radar) for nearly fifty years. As indicated in many of the public comments on the Preliminary Report and the FCC NOI, this sharing arrangement has been successful for both Federal and amateur spectrum users. This success is primarily due to the fact that much of the Federal spectrum usage is located away from populated areas, minimizing potential interference as well as the amateur's ability to utilize the guard bands placed between different types of Federal services....

Therefore, careful siting of government WPRs, and prohibition of non-government WPRs at 448-450 MHz is an established method of encouraging the most efficient deployment of a shared band and minimizing interference potential. The Commission should require siting coordination (or, at least, siting notification) in final rules for government WPRs. It should not permit non-government WPRs at all.

11. In summary, the Commission has proposed two actions that have a potentially substantial adverse impact on a large number of Amateur Radio operators in this proceeding. In each case, the Commission can minimize that impact. In the first instance, the Commission should insure that the Texas and New Mexico restricted area is minimized as much as possible, consistent with protection of military facilities. Second, the Commission should create a streamlined procedure for case-by-case exemptions from

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<sup>12</sup> The definitive international position on WPRs is Resolution 217 (WRC-97) which, in part, urges administrations to implement WPRs as radiolocation service systems in (440-450 MHz, among other bands) "having due regard to the potential for incompatibility with other services and assignments to stations in these services, thereby taking due account of the principle of geographical separation..."

the power limitation in the expanded protection area in Texas and New Mexico. With respect to Wind Profiler Radars, there should either be geographic siting coordination requirements for government WPRs in the 448-450 MHz band, or at least a prior notification obligation on the part of the National Weather Service.

Therefore, the foregoing considered, ARRL, the National Association for Amateur Radio, respectfully requests that the Commission make the proposed changes with respect to the 420-450 MHz band only in accordance with the accommodations recommended herein.

Respectfully submitted,

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